


Agriculture
and its needs

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Educational

Agriculture and Its Educational Needs

BY

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AGRICULTURE AND ITS EDUCATIONAL NEEDS

We are trying very hard in New York to bring the work of our schools to the support of our industries.

A year ago when I discussed the relations of public schools to the mechanical industries, I observed that the reasoning would be different as to the agricultural industries because the situations are unlike, and that I would take up that theme at some future time. I turn to it now.

The success of the farmer depends upon balanced character, love of the earth and of life in the open, knowledge of his farm and the ability to make some scientific applications, practical experience, a grasp

of market conditions, sound relations with railroads, in planning, and aggressiveness good business methods, more than upon expertness in craftsmanship. The farmer is his own capitalist. In New York we had 226,000 farms in 1900. They averaged almost exactly one hundred acres to the farm. Quite 200,000 of them were operated wholly or in part by the owners. There was little room for capital to dictate. Hardly any other man has the earning capacity of so much property dependent upon his personal attributes as the farmer. The mechanic's equipment is in his skill of hand and in his not expensive tools if he works by himself, or in a plant owned by others if he works in a factory. In either case he may move readily. The farmer's equipment is in his farm and in his trained and dependable judgment. He is very much a fixture wherever he is.

In the mechanical industries men live and think and plan and work collectively. They go out much of nights: they associate in organizations easily. In the agricultural industries men live and work very individually. They come to conclusions and carry out plans by themselves. In the cities, centralized capital on the one hand, and the leaders of labor organizations on the other, struggle with each other, to the frequent disadvantage of both. There much depends upon others. The farmer controls a considerable property, and the responsibility of prosperity or penury is very largely upon himself. With both the farmer and the mechanic the personality is of overwhelming importance, but the conditions give the individuality of the farmer larger opportunities and make his success or failure more notable. Essentially the farmer lives at home. The family life is

by itself. The work is at home. The family all have part in it. There is less mingling with fellow craftsmen and with the men and women of other crafts. Trades unionism is absent. The blacklist and the boycott are almost unknown. The farmer is both a capitalist and a laborer. If there are combinations to control the prices of labor, they will not hold together; and if there are combinations to control the prices of products, they are made by manipulators who get the advantages. It all makes so distinct a manner of life that it must create instrumentalities and policies of its own.

We live in an industrial democracy. We are to work out our political freedom and our political theories in our politics, our religion, our education, and our industries. People are to do what they can for themselves. What can only be done

in combination and through the use of common power may be done in that way so long as the fundamental equality of right is preserved. With this simple limitation, the State must aid all of its industries. And the manner of its aid must be specific, and the measure of it must regard the significance of the industry.

New York Agricultural Conditions

In days when the term "agriculture" embraced everything pertaining to the farm; when all there was of agriculture was "practical"; when we were almost wholly an agricultural people; when there were no glittering and gilded cities to allure the youth, and no railroads to carry them there; when our tillable lands were as potential as any which had been broken; when the farm raised all it needed, gloried in its independence, and was the attractive abiding place of its youth; and when a simple

school in co-operation with a simple and yet noble civilization sufficed to meet the essential needs of a virile people, New York was the first agricultural state of the Union. All that is much changed. You will not ask me to weary you with the details, available to all, which would prove an obvious fact. Taking our wheat, corn, oats, barley, rye, and buckwheat together, we have less in acreage and are producing less in quantity than forty years ago. The total value and the average value of lands, buildings, implements, machinery and livestock are less than thirty years ago. We have come to be the first manufacturing state of the Union. Our agriculture has not advanced with our manufactures. In the cereals other states, for sufficient reasons, have forged ahead of us, and it seems to me that we have not recouped where we might.

I have much in common with the practical farmer; I join him in his amusement

over "gentlemen farmers", but remind him that he ought not to begrudge them the pleasure they get out of it, nor be unspeakably cut up about the money they spend in the country. I am with him in his contempt for "scientific" farming which will not work, but I remind him that there is much scientific farming which *will* work, with his practical help; and that his practical experience will not accomplish a great deal without scientific help.

The situation in general, doubtless, is that agriculturally we are worse off than thirty or more years ago, and a little better off than ten or fifteen years ago. Relatively we have lost much ground in many lines, and gained ground in a few. The responsibility for some of the losses is outside of ourselves. But, while we could not avoid some losses, we have developed new situ-

ations and new demands out of which we might have made our losses more than good. We have started towards doing it, but we have not done it. It is not enough to give thanks that we are not worse off than we are. We must lay hold of the forces that will make us better off than we are and perhaps better off than we ever were. Those forces lie in scientific knowledge and in combined action,—not combined action which merely complains and tries to make other people pay for our losses, but combined action which will do things that we can not either of us do alone, and which will make it easier for the man who has juice and generosity and force in him to prosper above other men, and which, on the whole, will enable New York agriculture to come to its own again. Admittedly, there are some conditions that are against it, but there are more new condi-

tions which are in favor of it. If we can get the sentiment of the State in the way of reasoning that the government of New York should do as much for agriculture as for any other interest—or even a little more, and if we will lay hold of accumulated knowledge and apply it, and if we will organize a system of education which will support it, the somewhat heavy task may in time be accomplished.

Our Natural Advantages

There are natural advantages in our favor of which we are either unmindful or to which we give no fair value. Take for example the hills, the woods, the rocks, and the streams, the materials for building and for roads, the topographical, climatic, esthetic, healthful, and moral factors connected with them. I have lived for ten years in the Middle West upon a prairie where one could see the headlight of a loco-

motive for twenty-five miles. The soil is deep and black, without a stone in it. The people generally abhor hills as nature does a vacuum. If some freak of nature has formed a knoll, they call it a hill and try to plane it off. I have seen a fine row of maples half a mile long cut down because they lessened the number of rows of corn, and a man of wealth thought he could not afford it. The roads are often impassable, and the cost of hard roads almost prohibitive. Farmers live in rubber boots for months together. The motive for moving to town is much greater there than here, and when a farmer lives in town there is trouble at both ends of his route: at one end the tenant lets the farm look like Hardscrabble's shanty, and at the other the farmer wants to keep a horse, and cow, and pig, and chickens, to the annoyance of his neighbors, and does what he can to

avoid the cost of walks and pavements and sewers and electric lights. It is all natural enough, and only proves that the farmer is likely to be happier, and other people happier too, when he makes his farm an attractive and productive place and lives upon it. During my residence in Illinois, the farm lands in all the region advanced in price from about \$60 to about \$200 per acre. The regular crops of corn and oats make very sure returns of eight or ten per cent upon the latter valuation. The farmers are rational, and intense about making money, and all have bank accounts. But you do not have to get as much income out of land that you can buy for \$25 per acre, as out of land that is worth \$200 per acre, in order to make it pay; and the farm houses and their conveniences and connections are no better there than here. In New York, above almost any other state in the Union

we have the hills and lowlands, the woods and streams, the diversity of soil, and the stimulation of climate, which may easily make rural life the finest and the noblest in all the world. If we can adjust the best kind of education to it all, the great leader of the states will have no difficulty in indefinitely maintaining her supremacy.

We have eighteen hundred miles of state roads. Put end to end they would reach from New York to Buffalo four times over. Over eight hundred miles were finished during the past year. There are five hundred more miles of road under contract, and still another thousand miles awaiting contract. We have expended less than a quarter of the \$150,000,000 we have agreed to expend. With the good roads, and the telephones, and the trolleys, and the daily free deliveries of mails in all sections, the rural difficulties ought to measurably disappear.

Rural Life Gaining in Attractiveness

Of course there have been discouragements. It takes brawn, and brains, and confidence, and contentment, to till our New York farms. So does real success in all places and in all work. The weaklings have to fall down, wherever they are. The cities have attracted many vigorous and ambitious young men and women from the country. Often that has been well. One is entitled to do what he may love to do, if he loves to do anything. One is to be commended for casting his lot where he will, if he has head enough to think it out for himself. Such men carve out success, and many are heard of in the cities. The failures are never celebrated and the volume of them is never known. The farming sections have, of course, suffered because of the drift to the cities. There has not been much return drift. The reasons for

it are not hard to find. Those reasons are, however, beginning to disappear. The return drift is setting in and seems likely to be strong in the next generation.

State Sentiment

The thinking of the State has hardly been balanced in the last decade. We have been having more solicitude about forest lands than farm lands, about forest trees than shade trees or fruit trees, about wild animals than tame ones, and about trotting horses than work horses. Last fall we had serious forest fires, which stirred our concern and aroused our interest. We seemed to be well provided with men, machinery, and implements for fighting them. We have developed a fine sentiment about our forest preserve. We have created an efficient State Department to look after it. We have even got something about it in the Constitution. It is admirable, and we

are proud of it. We are protecting our wild animals. One has to pay for it, and be disgraced everlastingly, if he has a wild hen in his larder at any time in eleven months of the year, if it can be proved that the hen, when in life, *was* wild. Just now they are trying to mulct a man in penalties and punish him for killing deer that were tame and that he bred and raised in his own paddock. Last winter the Legislature made it a misdemeanor for a farmer's boy to shoot weasels and woodchucks beyond the narrow limit of his father's farm, at any time of the year, without paying a dollar for a license to try it. We will not worry about that: it will eventuate all right. But insect pests destroy more value in farm products every year than fires destroy in value of forest products in a generation. Our Science Division conservatively estimates that the annual insect destruction to

our farm products amounts to \$24,000,000. Eastern Massachusetts has lately had to fight the gypsy moth, a great destroyer of shade trees. It is said that in 1907 that state, in co-operation with the municipalities affected, expended \$750,000 to fight this pest. Now it is added that these little scoundrels are migrating to the westward on parallel lines of latitude, and that the first division has even got as far as Springfield, and is advancing upon us with grim and sullen determination. If they get up to the New York line, we will be likely to fight them with resources and energy enough to make them pale, because we shall be in comparison with Massachusetts and there will be some flavor of patriotism and rivalry about it. But fruit trees are as vital as forest trees! Hens are as much entitled to our respectful consideration as partridges! Jersey cows have as many claims upon us as

deer! I recall a saying of Mr. Beecher, that it was a great pity that people had to be born in India in order to hear Henry Scudder, the missionary, preach. Must we move to the mountains and the woods and live irregular lives in order to get that help for our common interests which none but the State can give?

How to Increase Earnings

There are ways by which our New York lands can earn more money, and the State is bound to help find them. We are not to do just as other states do. We have not the corn lands of Illinois and Iowa, nor the wheat lands of Minnesota and the Dakotas. But we have abundant facilities for producing things they can not grow, and we are close by great markets from which they are remote. But it would be well if we could see how much they are ahead of us in an all-important matter. That is, in the

kind of education which they are sustaining in the applications of scientific knowledge which bears upon the productivity, and therefore upon the life and pleasure, of the farm.

There are two great lines of State policy which our combined action ought to assure. We ought to very carefully work them out in our minds, have them established by law, follow them persistently, and bide our time. One concerns a system of education which is calculated to sustain modern agriculture, and the other relates to the things which our combined intelligence and power may carry directly into all of the agricultural parts of the State to help the people of readiest wits who are most disposed to help themselves.

The Rural Schools

I am, of course, far from contending that all that agriculture needs is to be supplied by public schools. There are other great

factors in the problem. With agriculture, as with every other great interest and its attendant life, there is as much to be reckoned with outside as inside of the schools. But it is not too much to say that agriculture above almost any other great human or commercial interest now claims the support of an adequate and comprehensive educational system.

Primary schools alone, no matter how good, can not supply the education which is required to make the most of the agricultural industries. The man who says high schools are unnecessary, in the country or anywhere else, is behind the times, and as much out of touch with rational educational policy as with the spirit of the country in which he lives. Nor is it going too far to say that colleges are as vital as high schools to a system of instruction which will be equal to the demands of agricultural ne-

cessity. The first national industry, which supplies the larger part of the raw material for our manufactures and produces four times as much in value as our mines and oil wells together, brings good policy to the aid of necessity in claiming the support of a universal system of education. It is not merely that the farmers' boys and girls, like all other American boys and girls, are entitled to their utmost chance: the nation's educational purpose has combined with situations and the importance of the industry to settle it.

I have discussed many times the improvement of the rural elementary schools and shall doubtless do it again, but I shall not go into that now beyond treating of the factors of an educational system which will support agricultural needs.

It seems to me that there is not much to be said in criticism of the rural schools so

far as general elementary instruction is concerned. It is true that there is a lack of grading and an absence of plan by which pupils may progress from one plane to another and continually look forward to higher work. But it is also true that the instruction is more individual, and that all of the pupils hear all of the instruction and all of the recitations in all subjects and in all grades of work. The rural schools are at least reasonably free from the overcrowding, the overdoing, and the over-exploitation for all manner of ends that is so common in the cities. The teaching is by young women of an average competency which is now remarkably high, and no one is allowed to teach without proved competency which is reasonable. If there could be a uniform system of supervision by superintendents who hold or can earn teachers' certificates, in districts that are small enough to make

actual supervision possible; if such a system of supervision could be free from all partisanship, and if the supervisory districts could be arranged so as to have the village high schools at the centers, and relate all of the elementary schools to them in a way, there might be a universal system of schools for teaching elementary English branches in the country, quite as well adapted to the general needs of the country as those in the cities are adapted to those needs of the cities. And this might all very easily be.

But while the schools of both elementary and secondary grade in the country are serving, or may without difficulty be made to serve the needs of the country in the ordinary branches of an English education, they are doing nothing to train specially for the vocation of farming. We have apparently come to the imperative need of training for the industrial vocations in the

cities. We have been training for the professional vocations for more than a generation. There is quite as much basis of reason and right in popular education for the vocation of farming, as for mechanical, constructive, commercial, and professional businesses.

The agricultural situation is absolutely distinct from any other industrial situation, and if it is ever met efficiently it will have to be met in a very distinct way. It will never be met by making the agricultural schools of the country primary schools. The children are too young to want much agriculture in the elementary schools: they want English, and mathematics, and the elementary sciences there. The primary children in the cities stand more in need of agriculture, than the primary children in the country. The primary schools in both city and country are all-around schools.

Some of the city children will go to the country: some of the country children will go to the city. The education of the country child is not to be narrowed down to things rural. His books are not to exclude illustrations from, and all other recognition of, rural life, but neither are they to exclude all else. His primary school is to be able to train him in the fundamentals of an all-around man, who will be free from all exclusiveness, and able to study and do to the best advantage anything that his qualities and his tastes may dispose him to study and to do when the time comes.

We could not establish exclusive agricultural schools of primary grade, even if we were to get wrong-headed and undertake it. All schools require balanced work until the time for specialization comes. Balanced work requires elements that relate to the country as well as those that

relate to the cities, and vice-versa. There are higher laws and fundamental principles concerning education, and they bear alike upon all parts of the country and upon all manner of people. If we violate these laws or break these principles, the people soon come to realize it and trouble is, as it ought to be, let loose upon us.

We have heard much about nature study. I recognize its value. I intend no offence to those who have much pleasure in it. It is good. But it is equally good for *all* children, as cutting paper, and weaving mats, and moulding clay, and the like, are good for all children. All of these things make for all-around culture, for all-around outlook, and for all-around love for work and for facility in doing. Nature study is quite likely to appeal less to the country child than to the city child for obvious reasons, and, while it is to be encouraged

in the country as in the city, it apparently has about the same relation to real agriculture that sloyd has to laying out an electric plant for a city, or laying down the keel for a battle-ship. In other words, it is a good thing—a good thing everywhere, because it helps mould the character of boys and girls and keeps the way open for what may come after, but calling it agricultural instruction will not increase its importance so much as it will confuse some minds and subject us to the criticism that we are not doing what we proclaim.

We are asked to encourage the teaching of agriculture in the elementary schools. I am for doing it so far as is practically possible. I admit, however, that I am at a loss to know what are the phases of real agriculture which are adaptable to the primary schools, or how to install them in ways that will dispose children

to become interested in them. I know of many things which look to quickening and dignifying the different agricultural industries, in which the children of farmers are likely to find interest and which are not incompatible with the plan and purpose of the elementary schools, and I am for introducing them into the course of study; but I confess that I am unable to see the reasonableness or the practicability of teaching real agriculture, any more than engineering or medicine in the elementary schools. Agriculture is not an elementary subject.

We are asked to have the normal schools train teachers of agriculture for the elementary and secondary schools. Some of the normal school teachers know something about some of the sciences that are fundamental to agriculture, and some of them know something about some of the practical methods of farming, although I suspect

that not many of them would claim overmuch. The fact is that nine-tenths of the students in the normal schools who will ever teach at all are girls. It is so, and doubtless it will continue to be so. Ambitious men who go beyond the high schools are going to the colleges. And the gods of the Greeks, mean and sordid as they were, would laugh at the spectacle of girl teachers training farmers' boys old enough to receive it, in the intricacies of real agriculture. Generations will come and go before there is any substantial result to agriculture through the girls in the normal schools.

In the last year or two the State has made appropriations to establish three secondary schools of agriculture. This has been in response to a general sentiment in favor of agricultural education, made without very full consideration of the true relations which education must sustain to

agriculture in order to be effectual, and without any definite general plan about agricultural education in New York. These schools will be of little avail to education, unless they are made a part of the educational system, and they will not be of much ultimate service to agriculture unless they are made to articulate with schools below and schools above them; and it will be well, before we go further, to thresh out the whole subject and determine upon a plan which will be comprehensive enough to be worthy of the State and of real worth to its agriculture and all of its other interests.

Wholly aside from the absence of plan about where we are going or where we are coming out, it is a very open question whether it will be well for the State to set up a few schools of a secondary grade in agriculture, or whether we should expect counties or townships to do it, or whether we should

develop agricultural instruction in the existing high schools. The Education Department has been multiplying and enlarging agricultural subjects in the academic syllabus for the village high schools, and we are to be guided somewhat by the ultimate policy of the State in the premises. The high schools, unlike the elementary schools, are upon an educational grade where the fundamentals of agriculture are quite practicable, and where the pupils are old enough to begin to have some real interest in the subject. Without discussing that, the interests of the State in general, and of agriculture in particular, clearly call for discussion and for a plan of procedure to the end that time, effort, and money be not wasted and substantial results indefinitely delayed.

It has not been the American plan to segregate instruction and students—cer-

tainly it has not been the plan where circumstances have not compelled it. The strength of the universities has been increased by the very coordination of their colleges, the strength of teachers and the potentiality of teaching has been enhanced by association with other teachers and other teaching; and the efficiency of students has been promoted by contacts with other subjects and with other students than those within the limitations of their own particular subject and their own particular class. It has not been common anywhere in the country to establish state schools below the college grade except for defectives or dependents, unless in association with a large and comprehensive institution and it is not too much to say that no school of agriculture in this or in any other country has become markedly successful which was not associated with a real university

or had not become in fact, if not in name, a real university itself. And I am bound to look with some regret upon any New York policy which would put students of agriculture in an enclosure by themselves and deny to agricultural students the associations with other students which their interests imperatively demand.

There are practical as well as educational difficulties. For example, the courses at these schools will have to be progressive and extend over a term of years in order to have any respectable result; and unless their number is to be indefinitely extended—unless, for example, there shall be at least one in every county—students will have to be separated from home and live at these schools for terms, semesters, and years together. The break with the home will have to be practically as complete as it is with college students. And the break

will have to come before the college age. The State will probably not multiply these schools to the number of forty or sixty, and the interests of the home, of the pupils, and of the schools, will hardly suffer the separation from the home before the college age. Then why not do the best we can for agriculture and for farmers' boys and girls, as for all scientific subjects and for all vocational training, in the existing local high schools, and when pupils are able and disposed to go away from home to school, prepare them for college and send them to an adequate college and have the benefit of it? And, looking at the other side of it, why enter upon or pursue a policy which must make the public high school in the smaller villages merely a preparatory school for the literary colleges? These high schools are the people's colleges. Why enter upon a course

which will weaken them on the literary and scientific side, and withhold the aid which they can give to the agricultural side better than any schools which are likely to be established? Why begin to exclude from them the things which are and must continue to be the widest popular concern? Why not determine that the high schools shall be broadened so that they will meet every need of all of their constituents, at least up to the time when pupils are mature enough to leave home to go to college? Science and agriculture are inseparable. Scientific training and research, associated with practical demonstrations, are the sum and substance of any real agricultural advance. No one who has had any experience in organizing a school of agriculture, with lands and implements and animals for practical demonstrations, and who knows the difficulties

and expense of organization and maintenance, will believe that there will be any considerable number of such schools established and efficiently sustained in this State. Such as are set up apart from an institution of higher learning will not be efficient. Nor if established, will they be largely attended by pupils of high school age who have to go far from home. And all around the village high schools there is already "practical" agriculture in abundance. It is fully up to the high school plane. Unless there is extreme care at the point where the ways are liable to part, there is great danger of projecting roads which will lead from, rather than to, the greatest good, not only to New York agriculture, but to New York education as well.

An Agricultural College

No educational system capable of adequately supporting the agriculture of a State

will be complete without an agricultural college. One with experience in developing an agricultural college worthy of the name will know that there will not be many of these institutions in the same state, no matter how great the state may be. In such a college the best scientific training and the deepest scientific research are imperative. If they are not of the best and the deepest they will be of no avail, and they can hardly be such apart from the teachers, the investigators, and the laboratories to be found at a real university. At a real agricultural college the most exact and reliable experiments and demonstrations are also imperative, and there are both educational and financial reasons in abundance why these will not be much duplicated, or often realized apart from a university. In all phases of higher education what is good is not cheap, and what is cheap

is not good. It is no less true—doubtless it is more true—in the higher study of agriculture than in any other phase of advanced education. And the higher learning is quite as vital to agriculture as to any other interest of the people. Then, a real agricultural college, associated with a true university, is the true policy in this State, and such a college may be expected to vitalize whatever is done in connection with agriculture in the high schools and whatever has a bearing upon agriculture in the elementary schools, and it may also be expected to incite and uplift profitable agricultural operations among the people. Then, whether or not an erroneous initiative has been given to provision for agricultural instruction of a secondary grade in this State, we have made no mistake concerning agricultural teaching of the college grade.

The State has recently built new agricultural college buildings, and provided for developing a real agricultural college, at Cornell University. There are those who ask,—Why has not Cornell, with New York's share of the land-grant funds, developed a real agricultural college before now? I am not one of these, because I know something of the difficulties which have been in the way. These difficulties have persisted until now, but happily they are now giving way. They have related to the scarcity of competent teachers with enthusiasm in the subject, to the absence of students who could matriculate in a college, to the absence of any actual and intelligent interest in agriculture on the part of the universities, and to the absence of any rational plan of the agriculturists for agricultural education. The western farmers have had more value at stake in their farms than we

have, and they have had to be more aggressive; and the measure of influence, if not of control, which they have had over the State universities has enabled them to solve difficulties and find ways for making agricultural colleges actually serviceable. Out of it all, the ways to that end are much clearer there and here than they used to be. The available funds of Cornell have all been used in other directions, and if anything worth while was to be done the State has had to do it, and I have been very glad that it has done it and not made the mistake in agricultural *college* work at least, of so scattering its benefactions and its directions that there would be only indifferent result.

*The Need of Democracy in Agricultural
Education*

So far, so good—but that is far from the sum of the matter. Before any system of

higher education can be of any substantial advantage to farming, it will have to have its head in a democratic and a sympathetic, as well as a real, university. Cornell University is a real university. Its ideals and its scholarship have been high. Its offerings have extended into wide fields, and its equipment has been measurably sufficient, But its disposition has never been so democratic as its management has desired it to be, or believed that it was, and its sympathy with the agricultural industries has never been so consuming as to lead it to rise above the commonplace in things agricultural, or to surmount the real obstacles to agricultural investigation and instruction. It is not the fault of a board of trustees, a president, a dean, or a professor. The trouble is beyond either. It will never be cured unless that university becomes the real instrument of the State, nor until there

is a strong factor in the board of trustees so keenly interested in agriculture that it will use its power to compel the university to accomplish the really great agricultural ends which can be effected in no other way.

In other words, the erection of buildings for a college of agriculture at Cornell University is not enough to insure much result to New York agriculture. The gathering of a faculty, the laying down of offerings, and the installation of an equipment, are not enough. That college will not only have to be as educationally respectable as any other college in the university, but it will have to stand in vital and living relations with every other. No matter how elaborately equipped it may be, it will accomplish relatively little unless it has the fellowship and the stimulus of the union of colleges and graduate schools which we call the University. It will not bear large fruits unless

it has to respond to the demand of a real constituency with large interests, nor until the purposes of representatives of that constituency who have the intelligence and the authority to undertake to accomplish particular things have to be met.

All of the natural sciences,—physics, chemistry, zoology, physiology, bacteriology, embryology, thermatology; the social and political sciences, history, economics, the mechanical arts, and divers phases of engineering; great practical experience, and a large amount of horse sense, are inseparably involved in that high agricultural development which must be had in the State of New York if her agriculture is to keep pace with the other commercial and intellectual activities of the State. Of course, not all the people engaged in farming can be equipped with all of this knowledge, but a considerable part of them must be to

the end that they may lead the way, and when such men lead the way all the rest will be copying larger men and better methods than they have sufficient opportunity to copy now. And there must be a place which will not only initiate new undertakings and lift old ones to higher planes, but a place to which any occult difficulty may be taken for investigation and report. And investigation and teaching, scientific research and the training of teachers and superintendents, must go together because one is as vital as the other, and each inspires and energizes the other. And with it all there must be, in the agricultural college at least, the ever-present feeling that agriculture is our most important business, and that the college which can quicken it has a larger mission and is entitled to a fuller reward than any other kind of a college which the ingenuity of man and the gener-

osity of a people have ever been able to put upon its feet. These specifications call for nothing short of a real university under some considerable measure of popular control.

Things Outside of the Schools

There are things to be done in the interests of New York agriculture, outside of the schools. There need be no squeamishness about doing them. There need be no hesitation about asking the State to do them when only the State can do them. It is clearly within the scope of the political power of the people to promote an overwhelming common interest by combined action when it can not be done individually. It is unmistakably so when the people acting together actually do so much to enlighten the political and professional life and culture of the State, and when they do so much to support so many

of the commercial interests of the people. After all that has been done in many other directions, agriculture need not hesitate: and others need not sneer, when agriculture ventures and asks.

For example, we ought to have a competent and complete agricultural survey made of all the farming lands of this State. The farmers ought to be told rather closely of the general attributes of the soil of the different counties and of its chemical elements as well. They should be told, in a general way but with some particularity and definiteness, how it may be used to the best advantage. One may say that they do know. Certainly they know much about it, but if the subject were to be intensively inquired into they would themselves be surprised at the number of things which have not yet occurred to them. Quite as certainly there

are some things which common usage shows that many of them do not realize. They should be told of the additions which are needed to restore what has been taken out, or to adapt it to the demands of new situations. They should not have to take this from commercial corporations that are selling fertilizers. They should not go on putting on stuff that contains nitrogen and no phosphorus, when what the ground needs is phosphorus and not nitrogen. They should not go on selling products containing constituents that the soil requires, when they are worth more to keep than to sell. The common belief among farmers, that mere rotation of crops rests and recuperates the soil, is doubtless fallacious beyond the fact that some crops do not deplete soil as rapidly as others do. What has been taken out, what needs to be restored, should be declared by competent authority acting for

and responsible to the farming interests. What may be profitably grown, having in view the factors in the soil, and the facilities for changing those factors, and the new facilities for transportation, and the new demands of the markets, ought to be asserted by undoubted authority. For example, again, if four-fifths of all of the farm animals in New York State were to be destroyed by some noxious disease, it would seem a great hardship, but if the pest would discriminate in favor of the one-fifth which it spared the fact would in the end be a real gain. We are continuing the propagation of great herds of mongrel animals which are commonly less serviceable than those which we might breed, and which often are not worth their keep. We fall far short of producing the best horses sufficient for our needs, either for all-around or particular service.

Every farm ought to have at least one new colt every spring. He should have a pedigree that he could be as proud of as a Son of the Revolution or a member of the Mayflower Society. He should not be expected to trot a mile in less than three minutes, but by the time he is four years old he should be worth at least three hundred dollars and create a sort of savings bank account for his owner. We are the first dairy state in the Union, but we have much to learn about milk cows and scientific dairying before we can be the first dairy country in the world. Of course, we have some fine dairy herds, and of course we have some up-to-date dairymen, but do any of us doubt that we have hundreds of thousands of dairy cattle which are too mean to keep, or that the very common practices of handling dairy products are alike a menace and a disgrace to us? Ample knowledge

upon the subject is available, and the real prosperity and pleasure of dairying, as well as the common safety of the people, depend upon observing it. Why not have the State make it known and compel us all to observe it? Indeed, why not have the State propagate the most desirable and profitable animals of the farm, and actually aid farmers in propagating such for themselves? There are a half dozen German states which have more money invested in buildings and grounds for a veterinary college alone, than the State of New York or its people have invested in veterinary science since the Mohawk began to pour into the Hudson. The Imperial Government of Japan has recently been studying the matter of hens, and, with its customary habit of taking care, has just sent two trusted representatives to England to select the best specimens of two breeds which it has

decided are best adapted of any in the world to the needs of Japan. Why did they not take American hens? Doubtless because they found that all chickens look much alike to most Americans. The proof of our indifference to domestic chickens is cumulative. Yet our State has \$15,000,000 invested in poultry, and there is as much difference in the individuality, and the productivity, and the respectability, and the value, of hens, as there is in horses, or cattle, or sheep, or swine, or people. This is an ideal State for first-class chickens and plenty of them, and why should we permit ourselves to be the seventh state in the Union when it comes to such attractive and money-making creatures of the farm? We smile about it, but other peoples make them the subject of governmental care. Then there are the other large matters of small fruits, and vegetables, and flowers,

for the markets. Here and there one gets rich through the discriminating propagation of one or the other, but most of us seem to blindly suppose that they are wholly dependent upon their own spontaneity, and that there is nothing to do but to leave them to nature and to chance. Yet there are other states and other nations which see that it is worth more than it costs to make each of them the subject of the investigations and the teachings of a distinct department of a university. Then there is the vital subject of horticulture in its larger aspects, with its infinite claims and its unspeakable possibilities. The apples, pears, grapes, and nuts; the forests, the shade trees, all phases of landscape architecture and gardening, demand the oversight and the leadership and the aid of the State on both the scientific and practical sides. Yet again, there is the still larger

subject of the homemaking, with its architecture and sanitation, the matter of decorations, the comforts and conveniences, with the adaptation of foods to the family needs, and the thousand things which with attention will make the life of the mother an easier one, and the possibilities of the children different and greater than they otherwise would be. And right there is the overwhelming consideration to which all others must be contributory, and before which every other pales into insignificance, and that is the public need of knowing that boys and girls are the first concern of a State; the public obligation to do the material things which will dispose every farm boy and farm girl to look upon farming not for the sake of the farm more than for their own sake, not as repellent drudgery, but as the high grade business that it is.

All these things are outside of the schools, but they have to proceed from the prev-

alent system of education and they all relate back to the schools. In a word, from which there can hardly be any dissent, the prosperity and the pleasure of a great industry depend upon the completeness, the symmetry, and the co-operative efficiency of the parts of the educational system which enter into its details and give rationale and character to it as a whole. And in another word, from which I do not expect dissent, the states which lay the most emphasis upon those phases of learning which bear directly upon the mechanical and agricultural industries, and which carry them right to the homes of the people, will enjoy the largest commercial prosperity and will have the happiest and the strongest populations.

*New York Behind in Agricultural
Education*

I do not often find myself in the attitude of a critic of the Empire State, but it must

be said that New York is far from the front in developing policies and establishing instrumentalities to aid either the mechanical or the agricultural industries. With the prestige and the advantage of being an old state, it would be strange if we did not suffer some of the disadvantages of it. Let me point out what the educational disadvantages concerning agriculture are, and *why* they are, and let us believe that we may cure them if we will.

The Federal Constitution left, as it was bound to leave, universities, as all other schools, to be propagated by the States. In every state formed after the adoption of "the more perfect union" the State constitution provided for a system of schools, and ordinarily for a state university. Education was a universal passion. The western pioneers had a dreadfully hard time, but they had the pride and nerve

which kept it to themselves. They were bound to build up new states to rival the old ones, and they realized that a comprehensive educational system was the only corner stone which such a new State could have. If they had little to do with, they were at least fortunate in the fact that there was nothing in the way. Even public universities were established in all of the newer states. The people laid the foundations of comprehensive educational systems, and crowned the systems with public universities. The potential power of all this has not been realized until the coming of wealth within the last twenty-five years.

Forty-six years ago the general government provided a gift of thirty thousand acres of land to each state for each senator and representative in Congress, upon condition that the state would use the proceeds for the propagation of a university which,

without ignoring other branches of liberal learning, would lay particular emphasis upon those bearing upon agriculture and the mechanic arts. The act was passed after a long struggle. It was passed more than once. It was vetoed by Buchanan. It was signed by the great Lincoln. This act was as epoch making in education as the Declaration of Independence was in political progress, or as the Ordinance of '87 was in the advance of public enlightenment and morality.

The newer states had the larger part in procuring its passage, and they were the quickest and the keenest to claim their rights under it. They had the freer democracy. They were in the pioneer stage. They lacked nothing in assertiveness. They wanted all that the older states had, and much more. Universal education became speedily a universal passion. Their

institutions were yet in the liquid state. The Federal grant would aid their already existent state universities, or support others. They had the system which could lay hold of the opportunity. Every one of them managed to comply with the terms and lay hold upon the grants. Often they had a hard time complying with the requirements for the twenty-five years following the war, but they held on. Then the country had filled up. More acres were put under the plow, and all the acres were made more productive. Wealth grew. In the eighties, and still more in the nineties, land grant institutions had developed more highly educated constituencies, and, quite as important, they began to show the people who were engaged in the commercial, manufacturing, transportation, and agricultural industries, how to make more money. That settled it. Nothing succeeded like

success. They went after more money, and now each gets \$50,000 per year beyond the proceeds of the land grants. And now, again, every one of the newer states puts into its State University or land grant college more than it gets from the Federal grants, and some of them twenty times as much. They are not fools: they are more intent than ever on having all of the education that any state has, with some to spare; the roads are filled with the coming and going of students. Nebraska and Wisconsin each has a larger proportion of college students than either New York or Massachusetts. There are graduates, and therefore trained agents, of the universities in every village and upon almost every farm, and all the people stand ready to make further investments where they will pay. They are not doing it for mere love. They see that there is money

in it. Added to the natural educational enthusiasm, that concludes matters.

The older states did practically nothing. They are only now opening their eyes. Their ignorance of patent facts is as monumental as it is stupid. Of course, the old order is in the way. It is the habit of the old order to question the academic quality of the new order of institutions. One college president laments that the people put their hands into the people's treasury to promote higher education. Another challenges the applicability of liberal learning to the industries. Still another says, as bluntly as it can be said in classical phrase, that it is all wrong to educate people out of their environment. And yet another looks through spectacles that are befogged with the literary and philosophical training of the ages, and stoutly denies that what actually *is*, can be. It is not strange. Nei-

ther men nor institutions can be made over in a minute, after they are fifty years of age. The old order is the persistent expression of social, political, and educational aristocracy. The new order is the advance agent of educational and industrial democracy. The new order is as sure to persist as the Republic is to endure, for it is only the logical outworking of the democracy of the nation. It is sure to go in every state, for the nation will never endure half slave and half free educationally, any more than politically.

In New York we are as yet in the old order. We are not quite so hide-bound as some who live in the still more educationally effete East. Some men and some facts have helped us. But we are a long way from being out in the clear sunlight. We almost lost the advantage of the Federal grants to higher learning for the masses

and the industries of the people, and would have done so absolutely but for Andrew D. White and Ezra Cornell, both senators of this State, one a scholar and educational organizer, who had been a professor in the State University of Michigan and the other an inventor and industrial organizer, a millionaire, and withal a philanthropist. Between them, with these qualities, and being in the Senate, they got up the best scheme that was practicable under the circumstances, rescued the grant to New York from utter failure by providing an endowment and creating an institution which could take it and try to meet the State's obligations concerning it. The State did nothing. It merely stood by and benevolently let the thing be done. The result was Cornell University. I have never been quite able to see how the scheme held together and worked out legally, but I im-

agine that, as it cost the State nothing, it was looked upon with a good measure of legal and administrative considerateness, as it certainly deserved to be. By reason of the sagacious location of the State lands, by other gifts, and by hard struggling, a great and influential university has grown up on the hillside at Ithaca. By reason of the circumstances of its origin, of its imperative legal obligations, and of the fact that its first two presidents—covering terms of twenty-four years—were professors from the University of Michigan, it partook of the form, of many of the factors, and of much of the spirit of the state universities. Because of the scholarships, and for other reasons, it stands in rather close relations to our State system of education. All honor to the men who have done it, and to all of the men and women whose sympathies have entered into

it. But it would be idle to say that in any essential way it sustains the relation of either a State University or an industrial college to the Empire State. It does not, and it can not, because it is not under popular control, and can not be responsive to the natural impulses of our unfolding political and industrial democracy, nor can its practical ministrations be accepted by the people as they would be if there were the sense of public proprietorship in it.

Aids to Wives and Daughters

Up to this time we have been thinking about the training which essentially relates to men, and about farming operations outside of the house. It would be a mistake to leave the subject without a word as to the special training of the women who live in the country, and as to the education which enters directly into the making of the farmer's home. To accomplish any large

results men and women must not only work together, but they must have equal advantages; they must be equally enthusiastic and aggressive, and the work of each must be equally regarded and respected by the other. There is a lack of such equality of outlook and opportunity in New York education. The women have less chance, not so much special training either in or out of the schools, not so many social contacts, not so many implements to do with, and not so much to stimulate and liberalize their work either within their own homes or in comparisons between different homes. Of course there are notable exceptions, but we have necessarily to deal with generalities. Of course, I intend no reflection upon a class of women who are as justly entitled to the highest respect for doing all they do under circumstances that are often discouraging, as

they are entitled to an open educational chance with the men, which very commonly they do not get. If the women could be put in charge of the farm, the operations would doubtless go quite as well as they do now, but if the men were to be put in charge of the house, the better part of them would either lie down under the burden or there would be so many changes and so many new conveniences and fixings and implements that the treasury would be bankrupted. I am not saying that all of the fault is with the men, although a good share of it belongs to some men. I once sat behind two farmers' wives through an admirable cooking demonstration at a county "domestic science" association. At the conclusion one said to the other, "I suppose this thing is all right for these city and university women, but I can cook without any of their help." Doubtless she could, and

quite as doubtless she belonged to a class who have as much to learn about the most desirable and economical food supplies, and the question of nutrition, and the manner of preparation, and the time for use, and the manner of serving, as I have to learn about a million things. And that is far from all there is of it. It reaches to the making, the sanitation, and the decoration of the home, to the furnishings and conveniences of the home, to the deep subject of home economics and household management, and to all that most effectually brings the vital support of the home to the support of the work upon the farm. It may make the life of the family something that ambitious boys and girls will cling to, even something which, being added to the rational and cordial welcome of their fathers and mothers, they will be proud to invite their friends to.

In a word, in considering the educational needs of New York agriculture, the educa-

tion, the liberal and special education, of women claims quite as much as that of men. There is quite as much necessity of specialization for girls as for boys, when the time for specialization comes. The courses in the secondary schools, whatever form the school is to take, are bound to regard the work of girls as well as that of boys, and there will be no complete or symmetrical college of agriculture unless there is associated with it a department of household economy, with the many offerings which go to the bottom of all the problems of the household upon the farm. Nor will there be sufficient result until the need of it is recognized among the people. And it may as well be added that when such courses are provided, there will not be so much result unless girls can go and take them with just as much independence, and security, and common respect as any boy upon the grounds.

If this can not be until boys are taught some lessons, the date of entering upon that process ought not to be long postponed.

Suggestions

In summary, I submit the following suggestions concerning the educational basis of the agricultural industries:

There should be a complete and inter-related system of schools, elementary, secondary, and higher, open to all, and essentially under the control of the people of the State.

The elementary school should be within reach of every farmer's home. So long as the school is adequately sustained and competently taught, the location may be left to the people of the district. It is more a question of expediency than of educational principle, and there is no balance of advantages in school concentration to

justify forcefully overthrowing an established order.

The elementary schools are to teach the elements of an all-around English education. They can not specialize much, and they are not to be in any sense exclusive. They are to aim at fitting children for the choice of any vocation they may prefer and for beginning the preparation therefor. They are always to preach the gospel of work, and to use books, objects and methods to stimulate quite as much interest—and in the country perhaps more interest—in agriculture as in any other industry. This should be guarded in making the elementary syllabus. The work of the elementary schools in the country as in the cities, should not dawdle and waste time through the multiplicity of books and the idle exploitation of pedagogical theories and methods. It should be definite quan-

tively, as well as efficient qualitatively. The attendance laws should be enforced in the country as in the cities, even though the extent of child labor upon the farm and the distance of the school makes neglect of the law very frequent and the difficulties of enforcement very great. The course should be simplified and shortened, and the child brought to the end of it, with the assurance that he has some definite knowledge and measure of efficiency, by the time he is fourteen years of age. Better professional supervision should establish some satisfactory basis of graduation from a country elementary school, and graduation should qualify the pupil for admission to the high school, or a district agricultural school.

There should be an approved high school within driving distance of every home. In this school there must be provision for an all-around high school train-

ing which will fit for college or technical school, and there should be a distinct cleavage in the interest of agriculture where pupils will elect it. Where there is sufficient demand for it to justify a distinct agricultural school of secondary grade, on a parallel with the trades schools which we are beginning to organize in the cities, and such course can be taken without weakening the established high schools, as it may be in the cities, argument will go some way to support a distinct agricultural as well as a distinct trades school; but I never expect to concede that agriculture does not rest upon a broader basis than mechanics, and that the management of a farm does not exact a wider field of knowledge than the training of workmen. Whether special training in agriculture be carried on in the established high schools or in distinct schools is largely a matter of expediency

and convenience. Let it be done in the neighboring village high school, or in a distinct school to be developed by a combination of districts or towns, or possibly by all the towns of a county, or wherever it promises to be most convenient and best. But, wherever done, it must train both boys and girls, and expect that they will live at home. The work must be fundamental to agriculture, that is, it must teach the natural sciences, something of economics, much of common business usage, and a great deal of the simpler phases of agronomy, horticulture, floriculture, vegetable culture, animal husbandry including dairying, home making, or anything else connected with the industries of the farm, so long as it can be done with the facilities which are practicable in such a school, with the life of the home, and all the surrounding environment for illustration and experiment.

But the general training should go far enough to largely relieve the student from the study of the English branches if he goes to the agricultural college. It is of a grade which may be quite as well done in the local school, and the student should not be sent to the college so deficient in the ordinary English branches as to make it necessary for the college to devote so much time to it to the exclusion of work in technical agriculture. And the technical agriculture in the high school should count as much as any other in credits, and also for admission to the agricultural college for those who will be disposed to go.

It would have been better if we could have well considered, and could have reached definite conclusions concerning schools of agriculture of secondary grade, before any of such schools was attempted by the State. Certainly others should not

be provided for unless after full consideration and upon some well understood plan. If the established schools are not to undertake this work, and the State is to do it directly, and there are to be forty or sixty of these schools, and if they are to meet real educational standards, then there is little to regret. If not, and if some agricultural work is to be done in the present high schools, and if a small number of these State schools can be firmly established between the existent high schools and the agricultural college, they might justify their cost. But there are difficulties in the way. It is likely to be hard enough for them to secure enough intending agricultural students and provide enough real agricultural instruction to justify their cost, when they are associated with a college or university, as at St. Lawrence and Alfred. It is quite possible, however. It will prove impossible

for one which is wholly independent of a college to do that, unless the State is to make a college, and not a high school, of it; and that would mean an expense which has not been thought of, and a rival to the State college at Cornell which has not been intended. It has been suggested that the proposed school at Morrisville which is as yet wholly unorganized, be transferred to Colgate University, an excellent institution which is but five or six miles away, and the suggestion seems worthy of serious consideration. It might be held to be unthinkable cruel for the State to wholly recall any institution of this kind which it had once agreed to provide, and I would be glad enough if the State would establish such a school at every college in the State which would be strengthened by, or be hospitable to it, if, after discussion, it should be thought well to make that the

general plan. But the State educational system would like to know what the educational policy of the State concerning secondary instruction in agriculture is to be.

It will be good State policy to give liberal support to the State College of Agriculture and expect to make large demands upon it. An agricultural college is bound to be a college as much as any other kind of institution which claims the name of college. Strong teachers and many offerings will have to precede the coming of students. No state will be likely to support more than one that will make much of an impression upon its agriculture. The offerings must be largely in agricultural technique. The equipment should be even larger in fields and barns and herds, than in libraries and laboratories, because the student should have a reasonable English education before he goes to college, and

because when an agricultural college has the large advantage of being a college in a university, it may count much upon the privileges which are common to all. By the time one who is to live on a farm goes away from home to an agricultural college, it is time he was given his fill of agricultural instruction that is actual and real. But a real college, properly sustained by the schools below, will gather students who can matriculate and thus make an impression upon the State which will endure. The State Agricultural College must be sensitive to rational and responsible agricultural initiative. It must not only train men to manage farms, but it must train teachers for agricultural work in the schools below. It must be scholarly, but it must be as democratic as it is scholarly. There are people who think that impossible. Therein lies the difference between the old academic

scholarship and the newer industrial scholarship. Other states have found that difference and reckoned with it more than once. We can beat them all if we will. The State Agricultural College must not only be sensitive to the initiative of others, it must have an initiative of its own. It must find out the things which New York agriculture needs to have done and go right ahead doing them, knowing that if they work it will get the glory, and if they fail it will be damned for it. Teaching and research must go together. They always help one another. The State College of Agriculture and the United States and New York State Agricultural Experiment Stations are bound to supplement each other. Ithaca and Geneva are not far apart, and the roads between them are very pleasant. Between them they are bound to investigate, supply information, and have an

opinion upon every problem a New York farmer will bring to them, and when they do it the New York farmers are bound to listen to them. They are to supply energy and guidance to every farmers' organization and every agricultural enterprise. In theory and in fact they are to assume the leadership in a great system of education which adequately supports our fundamental and our greatest industry.

We should enter upon a great system of agricultural extension. The schools, from highest to lowest, should act in accord, not only in training students, but in carrying knowledge to the very doors of the farmers. Evangelistic work in agriculture should go everywhere. Seed specials should be run over the railroads. The blood of the best farm animals should be distributed throughout the State. Object lessons of special interest to both men and women

should be carried in all directions. The applications should be especially adapted to every section, and the fullest attention should be given to the less favored rather than to the most favored counties of the State.

I hesitate not a moment in saying that the State might well send a commission of practical farmers and trained scientists, or, perhaps better, a commissioner who is experienced in farming, informed in economics, and trained scientifically, to any country in the world that seems able to send us anything in the way of farm products or domestic animals that will be of advantage to us, with authority to buy, and directions to learn whatever would be of advantage to our agriculture. I noticed in the New York papers of this morning that New Jersey has just imported fourteen Percheron and Clydesdale horses to extend

the breeding of these magnificent draft horses among her people. And I know of another state which has sent one man to Germany to study veterinary colleges, another to Denmark to study dairying, and a third to Argentina to investigate beef cattle. There are scores of similar subjects which individuals can not exploit because they do not know what to do, or are without the money or the inclination to engage in large undertakings. In such circumstances it is clearly within the functions of the state to act. There is no smack of paternalism or socialism about it. All good governments do it in order to aid the industries of the people. It involves no large amount of money, in view of the sums to which the state is accustomed. But it can not be done by agents who know little about it or who are more concerned about themselves than about

the enduring interests of a great state. If honestly and capably done, the sentiment of the state would cordially sustain it. And if it were done through the State Agricultural College, or the Agricultural Experiment Station, or one of the State schools of agriculture, there would be sufficient assurance that whatever was undertaken would be scientifically initiated and well and wisely carried out.

Conclusion

There are perhaps three great fundamental factors in the distributive wealth of a State, namely, natural resources, commercial situation, and the intelligence with which they are made the most of. The largest factor in natural resources is doubtless the tillable soil. We can not claim that the proportion of our potential soil to acreage is equal to that of some of the prairie states, but there is no doubt whatever

that, with existing farm values, our soil may be made to yield quite as large a return upon investment as that of any other state. Aside from that, nature has been exceedingly kind to us. In the association of arable lands with mountains, and rivers, and lakes, and forests, and glens, and waterfalls, and with rainfalls and climate, and all that stimulates the imagination and makes for the physical and moral health of the people, we stand second to no State in the Union. In the association of all this with commercial situation, we easily have the advantage of them all. And we will never admit that we lack the sense or the wits to act together and make the most of what nature and situation have done for us.

We have much to demoralize our thinking, but we may well remember that the things in the life of a people which are of utmost and enduring worth invariably go

back to Mother Earth. Manufactures are dependent. Importations are uncertain. We may not always take toll of the commerce that comes through both our eastern and our western doors and is carried over our highways. Our great metropolitan city may not always be the clearing house of the nation's business, and even though it is, the profits will continue to go into relatively few hands. Mother Earth will never forsake and she will never fool us. Neither will she permit us to trifle with her. One who can not afford to lose, can not afford to speculate in uncertain and demoralizing crops any more than in uncertain and demoralizing securities. Nor can he afford to go on in the way which did well enough when we were wholly an agricultural people, when children were seasoned through doing their share of the work, when books were few, and when the simple

district school joined with the work of the farm, to support a simple, but none the less a noble, civilization. We shall be misguided if we do not continue to abide with Mother Earth and follow the course which will continue to make the most of her.

And we shall be as witless as well as a misguided people if we do not combine to ascertain from the reports of the markets and the work of the laboratories what may be done without much risk, and if we do not adjust ourselves to the more complex, the more intelligent, and the better life of our day in a way which will enable our properties to get our share out of it. The farm house will have to have the essential conveniences and connections of the city house. The boys and girls will have to have the things which they know other boys and girls have. The young men and maidens will have to have a good time of it and be

able to find the ways for meeting their reasonable ambitions. The shorter working day and all the better conditions of labor will have to be reckoned with. The comfort, and the enlightenment, and the moral betterment of all in the household will have to be sedulously studied and generously provided for.

Of course the social, and educational, and industrial combination will give help to such as accord with it and are capable of making use of its advantages, but the personal equation will have to settle things upon each farm, and the personal attributes of the individual farmer will have to prevail. But, while, no matter what the general level of intelligence and sagacity, some will fail and complain, and some will prosper and be happy, yet, there is no doubt about the public attitudes and the common undertakings of a people being

often vital to the progress of men and women who deserve to prosper. In this sense the people and the government of New York have occasion enough to do much to widen the door of opportunity to all of our agricultural industries.

To find the true and sure ways for widening that door a new body of learning is quite as necessary as old-time practical experience in farming. It is no easy task. Both educationists and farmers will have to bury their conceits and enter upon the breaking out of new roads with all modesty of opinion.

Governor Hughes has given us an admirable Commissioner of Agriculture. Liberally and specially educated, in full sympathy with the new spirit of agriculture, with youth and ambition and yet with considerable experience and undoubted gifts in administrative lines, the appointment o

Mr. Pearson to the headship of the agricultural activities of the State is altogether timely and encouraging. I am anxious that the forces which he and I represent shall work in rational co-operation, and that each shall bring out the best there is in learning and in labor. A new system of agriculture and a new system of education will have to join forces. Farmers and educationists will have to join hands in arranging the details of a new system of education and in making new plans about work. I am sure we have all come to the time when we shall be glad to have it so. If we have, the rest of it will not be so difficult after all. Both agriculture and education will be the gainers by it. Our education will more completely aid the evolution of our industrial democracy, and our agriculture will more surely come into the possession of its own again.

